

The Office Action rejects claim 4 under 35 U.S.C. §112, second paragraph for being indefinite. The claim has been amended responsive to this rejection. As such, withdrawal of this rejection is respectfully requested.

The Office Action rejects claims 1-8 under 35 U.S.C. § 102(a) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a), as being unpatentable over, U.S. Patent 6,136,464 to Wakabe et al. (Wakabe). Applicant respectfully traverses these rejections.

Applicant has reviewed Wakabe and provide the following comments.

Wakabe is directed toward a battery and safety device that breaks the circuit to a load once a certain pressure in the battery is sensed to prevent the battery from erupting.

As shown in Fig. 4, Wakabe discloses an embodiment that includes a charge-discharge lead connected to a positive terminal 3 and an electrode terminal 4. A pressure-sensing device 1 is provided between an electrode element 12 and a case cover 10. The pressure-sensing device 1 is laser-welded to the case cover 10 to assure a hermetic seal.

The pressure-sensing device 1 has a convex portion 5 that protrudes toward the exterior of the battery. Thus, when the pressure-sensing device 1 reverses itself, the convex portion 5 moves upward and cuts the discharge-discharge lead 2. Furthermore, once the pressure-sensing device 1 is deformed, the deflection is maintained and does not return to the original concave form. In operation, when the pressure in the storage battery increases, the pressure-sensing device 1 moves upward toward the charge-discharge lead 2 to cut the lead 2 so as to release and reduce the pressure built up within the case 11 of the battery.

Fig. 8 of Wakabe illustrates another embodiment wherein a charge-discharge lead 102 is positioned directly beneath a gas vent hole V and a charge-discharge lead cutting device 103 is positioned on a pressure-sensing device 101. The pressure-sensing device 101 is adapted to deform upward in response to an increase in pressure within the battery. Thus, the charge-discharge lead cutting device 103 moves upward and cuts the charge-discharge 102, thereby interrupting the flow of current through the connecting wire 107.

Fig. 14B of Wakabe illustrates yet another embodiment, a cover plate 209 that closes a top portion of a gas discharging opening 231. A pressure plate 210 is mounted on top of the thin metal plate 209. Packing 207 is positioned beneath the pressure plate 210, cover plate 209, and gas discharging opening 231.

In item 6 of the Office Action, the Office Action alleges that any one of the above-described embodiments of Wakabe either anticipate (§ 102) or render obvious (§ 103) the sealed battery recited by the presently pending claims of this application.

Applicant respectfully disagrees with the allegations put forth by the Office Action for the following reasons.

Pending claim 1 of this application recites a sealed battery, comprising a generator element that is an electrode group impregnated with electrolyte. An external casing that has an opening and encloses the generator element. A closure cap for sealing the opening, the closure cap having a gas release valve that is formed by covering a gas release hole in the closure cap with a thin film. A shielding member that is between the thin film and the generator element to protect

the thin film from the electrolyte so as to secure a gas channel from an internal space of the external casing to the gas release hole.

Regarding the embodiments shown in Figures 4 and 8-9 of Wakabe, the Applicant provides the following comments. Figure 4 does not include a gas release hole. Furthermore, the embodiments of Figures 8-9 also do include a gas release hole (V), however, these embodiments do not include a thin film shielding the gas release hole.

In other words, the embodiments shown in Figures 4 and 8-9 of Wakabe do not have the feature of the gas release valve recited by the claimed invention in pending claim 1 wherein the closure cap has a gas release valve that is formed by covering a gas release hole in the closure cap with a thin film.

As such, Applicant respectfully submits that the embodiments of Figures 4 and 8-9 of Wakabe do not teach, suggest, or disclose all of the features recited by pending claim 1 of this application.

Regarding the embodiment shown by Figure 14 of Wakabe, Applicant provides the following comments.

Although the Office Action took the position that "the packing material is porous," Applicant respectfully submits that no such disclosure or suggestion is provided by Wakabe. As such, Applicant respectfully submits the Office Action erroneously concluded that the packing 207 is porous. In fact, Applicant submits the packing 207 is not porous and that this is the reason why the packing 207 is provided with the gas discharge opening 231. As is clear from Figure 14C, the packing 207 has an opening at the gas discharge opening 231.

Figure 14 of Wakabe clearly shows the packing 207 having an opening at the gas discharging opening 231. In other words, the packing 207 of Wakabe does not have all of the recited features of pending claim 1 of this application, let alone acts in the same way as the shielding member recited by pending claim 1 of this application. Applicant submits that the structure of Wakabe would suffer from electrolyte scattering from the electrode element through the gas discharging opening 231 that would directly strike the thin metal plate 209.

As such, Applicant respectfully submits that the embodiment of Figure 14 of Wakabe does not teach, suggest, or disclose all of the features recited by pending claim 1 of this application.

To qualify as prior art under 35 U.S.C. §102, a single reference must teach, i.e., identically describe, each feature of a rejected claim. As discussed above, Wakabe fails to teach, suggest, or disclose each and every feature of rejected claim 1 of this application. Accordingly, Applicant respectfully submits that pending claim 1 of this application is not anticipated by, nor rendered obvious in view of, Wakabe.

Therefore, claim 1 is deemed allowable.

Claims 2-8 depend from claim 1. It is respectfully submitted that these seven (7) dependent claims are allowable at least for their dependency on allowable base claim 1 as well as for the additional subject matter recited therein. Discussion of the specific additional recited subject matter is therefore omitted.

As such, withdrawal of these rejections is respectfully requested.

The Office Action rejects claims 1-2 and 4-5 under 35 U.S.C. §103(a) as being unpatentable over JP 07022013A (JP 013). Applicant respectfully traverses this rejection.

The handwritten notes on the first page of JP 013 appear as if the Office Action is relying upon the drawings for the basis of the rejection.

Applicant respectfully disagrees with this rejection for the following reasons.

Applicant encloses herein a translation of the relevant portions of JP 013 to traverse this rejection. As is clear from the enclosed translation, although JP 013 provides the positioning relation between the thin portion 7a and the gas vent hole 8a, the gas vent hole 8a is not provided with a thin film. The Office Action admits that JP 013 lacks this feature. Moreover, Applicant further submits that in an alkaline storage cell to which the cited invention is directed, there is no need to provide a thin film to for the gas vent hole.

Additionally, it appears as if the Office Action argues the gasket 7 of JP 013 corresponds to the shielding member of the claimed invention of this application. However, Applicant submits that the gasket 7 of JP 013 does not allow for gas to exit the cell through the gas vent hole 8 unless the thin portion 7a ruptures. In other words, unlike the claimed invention of this application, the gasket 7 of JP 013 is not provided in a manner "to secure a gas channel from an internal space of the external casing to the gas release hole." Therefore, Applicant submits that it would not have been obvious for one of ordinary skill in the art to provide the JP 013 dry cell with a shielding member to prevent the liquid electrolyte of the battery from exiting the cell or contacting the casing material as alleged by the Office Action.

As such, Applicant respectfully submits that claim 1 is not obvious in view of JP 013 and is allowable.

Claims 2 and 4-5 depend from claim 1. It is respectfully submitted that these three (3) dependent claims are allowable at least for their dependency on allowable

base claim 1 as well as for the additional subject matter recited therein. Discussion of the specific additional subject matter is therefore omitted.

As such, withdrawal of this rejection is respectfully requested.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of claims 1-8, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300 referencing docket number **101201-00001**.

Respectfully submitted,
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Enclosures: Petition for Extension of Time
Marked Up Version of Claim as Amended
Partial Translation of JP 013

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Marked Up Version of Claim as Amended

Please amend claim 4 as follows:

4. (Amended) The sealed battery according to claim 3, wherein a size of the shielding member relative to a diameter of the gas release hole is [no smaller than] equal to or greater than the thin film.



[Partial Translation]

JAPANESE LAID-OPEN PATENT APPLICATION NO. 07-022013

Application Date June 29, 1993

Laid Open on January 24, 1995

ALKALINE DRY CELL

[omission]

[THE PROBLEMS THE INVENTION IS GOING TO SOLVE]

[omission]

[0006]

The present invention overcomes the above problem occurring when the burst preventing mechanism is activated, and aims to improve safety and reliability of the products by restraining an electrolyte from scattering when the burst preventing mechanism is activated so as to reduce damage to a human being or the device due to adhesion of electrolyte.

[0007]

[MEANS TO SOLVE THE PROBLEMS]

Generally, a burst preventing mechanism for an alkaline dry cell is incorporated into: a gasket made of resin acting as a sealing material; a washer; and an assembled sealing body

which comprises a collector and a base plate acting as a negative electrode terminal plate. That is, when pressure is generated in the cell and the inner pressure exceeds a predetermined level, the gasket made of resin partly ruptures. This allows gas existing in the cell to exit from the ruptured portion of the gasket via a gas vent hole of the washer and a gas vent hole of the negative electrode terminal plate the assembled sealing body.

[omission]

[0013]

In the embodiment 1, a gasket 7 was made of resin and partially constituted by a thin portion 7a. As shown in FIG. 2, each gas vent hole in a sealing body was arranged as follows. A gas vent hole 9a of the negative electrode terminal plate 9 was placed in the closest vicinity of a portion of the gasket 7 at which rupture would take place when pressure was generated in the cell, and the gas vent hole 8a of the washer 8 resided between them was adjusted to be at a 180° rotated position from the rupture portion of the gasket 7 and from the vent hole 9a of the negative electrode terminal plate 9 with the collector 6 as its axis. The assembled sealing body was prepared to seal a cell in such a manner that gas would exit the cell through

a path indicated by the dotted line when the burst preventing mechanism was activated. The washer 8 acted as a shielding so that gas was discharged by detouring the washer 8, thereby separating electrolyte from the gas.

[0014]

In the embodiment 2, the gasket 7 formed without a thin portion, the negative electrode terminal plate 9 having one vent gas hole 9a, and the washer 8 positioned between the gasket 7 and the negative electrode terminal plate 9 were used. The washer 8 had one gas vent hole 8a and a blade-like projection 8b, which was pointing at the gasket 7 and in symmetrical relation with the gas vent hole 8a about the collector 6. As shown in FIG. 3, the blade-like projection 8b provided on the washer 8 was arranged in the closest vicinity of the gas vent hole 9a provided through the negative electrode terminal plate 9. An assembled sealing body was prepared to seal a cell in a manner that gas would exit the cell through a path indicated by the dotted line when the burst preventing mechanism was activated. The washer 8 acted as an obstruction so that gas was discharged by detouring the washer 8, thereby separating electrolyte from the gas.

[omission]